Utricularia asplundii and Utricularia endresii

by
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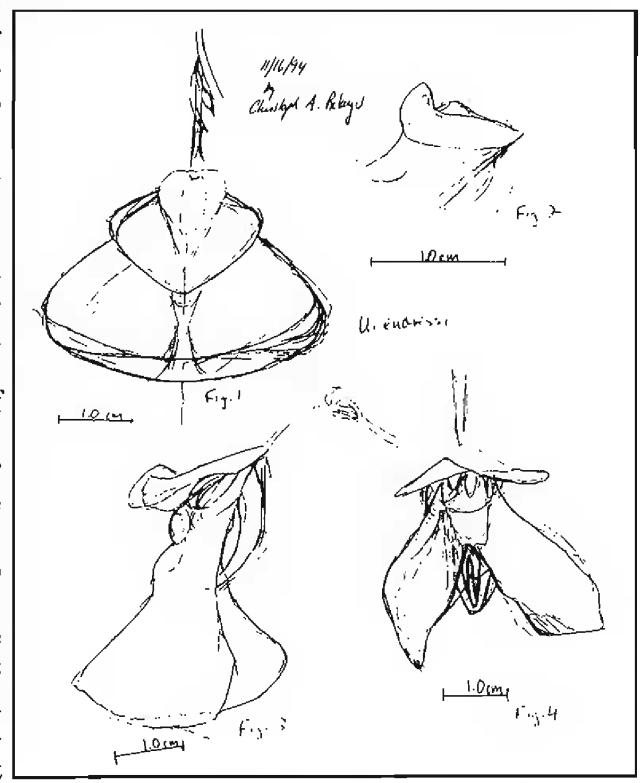
Nine species of *Utricularia* make up the section *Orchioides*, all of which grow in Central America, the Antilles and South America.[1] These species all grow in the moss and bark of tree trunks and have large, spectacular flowers and subsurface tubers. They are found at various altitudes, but the majority grow in mountainous regions. Their unique environmental expectations may explain why some, like *U. quelchii* and *U. campbelliana,* are nearly impossible to grow. To this day, I am still looking for the factors that are eluding me in the successful cultivation of these species.

Most carnivorous plant enthusiasts consider these species difficult because they rot easily if the conditions are wrong. Furthermore, they rarely flower, and even if they do the grower often fights a battle against rot which sets in soon afterwards. This has occurred several times with my own clone of *U. asplundii* and Barry Meyers-Rice has reported the same occurrence with *U. alpina*.[2] However, these difficulties can be avoided if the grower pays attention to the growth cycles of the plants. Over time, the cycle has become clear to me and I am writing to help others successfully grow and enjoy these truly beautiful *Utricularia.*

After several years of growing *U. asplundii,* it became evident the plant has an obsucre growing cycle. This was very hard to detect because it seemed the plant was flowering at random times. Now, the cycle is clear. Here in the Northern Hemisphere, the winter growing period is initiated between late October and early November by a vigorous production of new leaves and flower stalks, and the flowers bloom in mid-January. It maintains this growth until about May/June at which point the rate of growth almost halts. It appears that the increase in temperatures triggers the dormancy.

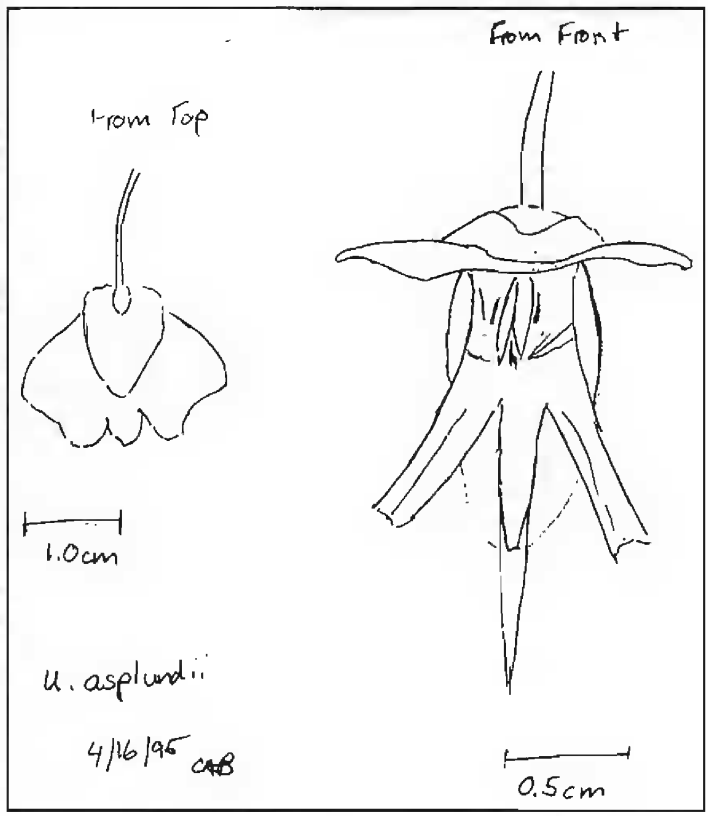
My *U. endressii* exhibits a similar growth cycle. In the spring of 1993 my clone accidentally dried out considerably - it responded by losing all its leaves. At first, I assumed that the plant was lost since most *Utricularia* would not survive such a drought. But, I discovered the tubers were still intact and apparently healthy. I repotted it into a smaller pot in September, 1993. Once the temperatures cooled to 20°C (68°F) growth resumed, just like it does for *U. asplundii,* and produced a flower in December for the first time, suggesting these plants need a resting period to initiate flowering.



To test my hypothesis, I conducted a small experiment with *U. asplundii.* I divided the clone into two equal parts, potted both in a mixture of orchid bark and Sphagnum, and kept them in identical conditions during the winter. Both samples flowered during the winter. The following summer I kept one of them in the same wet conditions as I have in the past and it rotted. The other I kept dry, watering only to keep the medium from drying out completely. Growth stopped completely, but no leaves died down, the plant did not rot, and the tubers remained healthy. Once daytime temperatures cooled to 20°C (68°F) in August, growth resumed slowly. I maintained these temperatures, and two months later the plant

produced a flower stalk. This proved that these plants require a dry period in the hot summer, and cool temperatures in winter for them to flower during the winter months and survive.

U. endressii can easily be distinguished from *U. asplundii*. First, the leaves of *U. endressii* die down completely during the summer months, leaving only the tubers, and second, the flower is lavender with a double crest. The 20cm leaves are much larger than the 12cm leaves of *U. asplundii*. Finally, *U. endressii* produces very few leaves, only about 3-5 per growing period, whereas *U. asplundii* produces leaves continuously.



The flower stalk of *U. endressii* is about 35cm long and has four light violet/lavender flowers. The lower lip is 4cm wide and about 4.5cm long. The spur is about 2.5cm long, curved upwards, and about half as long as the lower lip. This differs from Taylor's describtion, which claims the spur is as long as the lower lip. The base of the lower lip has a yellow bilobed crest. Further towards the base is another swelling, giving the flower a double crest. (Fig. 2) The upper lip is about 2.5cm long and about 3cm wide and is, corresponding to Taylor's description, "transversely elliptic with apex rounded."[3] (See Figures 1-4) Characteristics not mentioned by Taylor are the black coloration of the anthers, the cream coloration of the pollen, and the smell of the flowers. The smell is difficult to characterize. I find it revolting, musty and similar to the sharp smell of rotting potatoes, while a friend thinks it is close to pine resin. In any case, I would not compare the smell to the beauty of the flower itself.

The flowers of *U. asplundii* are as beautiful as those of *U.endresii*. They are borne on a 20-30cm long peduncle that, by the time the flowers open, drapes itself around neighboring plants. Each peduncle supports up to nine flowers, more than double the number Taylor says it should have.[4] The flowers are smaller and certainly more delicate than those of *U. endresii*. The color is also different - they are white, with a very faint violet border around the edges that fades with time. The crest bears two longitudinal yellow stripes outlined in violet. Lorenz Bütschi published a beautiful photograph in CPN (Vol. 18, p. 17). In my plants the upper calyx lobes are roughly the same size, being about 1.5cm long and 1.0cm wide, broadly oval, with rounded apices (Fig.6). The upper lip is transversely elliptic and measures 2.0cm wide and 1.5cm long. The lower lip is 1.5cm long and is 0.5cm wide near the crest and increases to 1.5cm wide at the widest expansion of the three lobes. The lower lip is divided into three equal lobes 0.5cm long giving the impression of a three-pronged fork. The spur is longer than the lower lip at 2.0cm long. Near the spur's halfway point there is a yellow marking. The anthers of *U. asplundii* are cream colored, unlike those of *U. endressii*. Overall, my clone is reminiscent of a spider plant with its drooping inflorecences and erect leaves.

If the grower pays close attention to the cycles of the species they will reward him or her with a beautiful spray of flowers. As medium for both *U. asplundii* and *U.*

endressi, I use a mixture of long fibered *Sphagnum* and orchid bark. This allows the plant stolons to breath and also makes it easy to control the moisture level of the medium, especieally during the dry season. As already mentioned the cycle of *U. endressi* is distinct. After the flower is spent, the flower stalk slowly turns yellow and dies. At this point, I cut it off. Several months later, in June, the leaves turn yellow and die. To prevent fungus, I remove them by pulling them gently away from the base. Usually they break off naturally at a joint-like structure at the medium surface. During the three hot summer months, the low temperatures barely dip below 20°C (68°F), I keep the dormant plant just barely moist, and occasionally allow it to dry out on the surface. As soon as the weather cools to a low temperature of 55°F (15°C), the first leaves appear, unfurling like the leaf of *D. binata*. Another is produced before the flower stalk appears and the cycle is complete.

If one is fortunate enough to be in possession of such a plant, the most important thing to remember is that these species require a resting period. If this is observed, the plant will reward the grower with a wealth of flowers that exeed the beauty of orchids. Maybe this will also lead others to think about how *U. quelchii* has adapted to its harsh environment atop Mt. Roraima and develop a way to grow it. In any event, the *Orchioides* section of *Utricularia* contains some of the prettiest and most rewarding plants to grow.

Acknowledgements

I would like to kindly thank Barry Meyers-Rice for reviewing this article and providing some very helpful comments.

References

[1] Peter Taylor, The Genus *Utricularia*-a Taxonomic Monograph (London: Her Majesty's Stationary Office, 1989), 407.
[2] Personal communication with Barry Meyers-Rice, Spring,1994.
[3] Ibid.
[4] Ibid., p.420.

Literature Review

Kite, L. Patricia. 1995. Insect-eating plants. The Millbrook Press, Inc. 61 p.

This is a nice little book intended for younger readers (I would estimate ages seven or eight(advanced readers) to twelve or thirteen), and of course is an introduction. It is intelligently written for the young reader. There are fetching color photos throughout, a sampling of various genera of CP covered. The print is somewhat larger than usual and the printing and photos are crisp and clear, the paper excellent, and there is a good binding. There is a brief chapter on conservation, another on growing selected plants, and advice on finding more information. I think this is a good introduction for its purpose and should be in all grade and middle school libraries, and on your shopping list for that youngster in your family, or the kid next door always asking about your plants.

For purchase price information and postage requirements, write: The Millbrook Press, Inc., 2 Old Milford Road, Brookfield, CT 06804; or order through your local bookstore.

News and Views

Heiko Rischer (Kernerstr. 31, 71106 Magstadt, Germany)

Concerning *Nepenthes treubiana* Warb. type specimen (Warburg 20581): There was some vagueness in the past whether the type specimen of *N. treubiana* Warb. stored in the Museum Botanicum Berolinense had been destroyed in World War II or not (Jebb, M. (1991): An account of *Nepenthes* in New Guinea, 17 (1), p. 43). During a short visit in February 1995 I looked through the *Nepenthaceae* of the Herbarium and found the type specimen present. So it seems that a Neotype is not required.